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AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

AUGUST 15, 1935

EXOCHORDAS AMONG SHRUBBERY

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Chlorosis of Ornamentals
School Ground Landscaping
Little-Known Campanulas

AMERICAN NURSERYMAN

Chief Exponent of the Nursery Trade

F. R. KILNER, Editor

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NATIONAL ORGANIZATION.

The inquiries as to what happened to the revitalization plan at the A. A. N. convention indicate a continued widespread interest in the objects set forth in the Costich committee report a year ago. The program outlined was found actually to be a large one, not to be accomplished immediately. The only action taken at the Cincinnati convention was to give the affiliated associations a vote on the convention floor; the remainder of the program was turned over to the executive committee for further consideration and subsequent action.

Not all the associations which approved the Costich plan are affiliated members of the A. A. N. But any action of the national association in furtherance of the plan would depend upon the responsive action of the state associations for its ultimate success. This conclusion is expressed by R. D. Underwood in the Jewell News Flash in his comments on the national convention. He says: "Many hoped that the 1935 convention would find a practical means of fabricating a better organization pattern. From the news accounts we believe that progress toward that end was made. The drift of the debate seemed to accentuate the idea that the final answer will come—when, as and if—the state associations get themselves thoroughly organized. In so vast a domain as the U. S. A. a proper and potent national organization will, it seems, have to be a federation of state groups."

The view of a national organization as the coöperative effort of the state associations is also seen by P. J. Van Melle, who has been active in the discussions regarding the nurserymen's national organization. In a communication to the editor he expresses a change in conviction, from the necessity of reorganization of the existing national association, to the formation of a new and representative organization, which he expects will consist of "the simplest possible national affiliation of state units, contributing to a national treasury and sending delegates to semi-annual national conventions on a per capita basis."

The proposed reorganization of the A. A. N. would depend upon the response of state associations to an invitation from the national body to participate, a result over which the A. A. N. would have no control. On the other hand, the state associations may engage in a voluntary effort to bring into their own units as many as possible of those who are eligible for membership and then, with this strength, join in a national council, bureau or association which would further their interests in any way they desired.

In the last analysis, it must be obvious that any organization is dependent upon the extent and representation of its membership. The A. A. N. is at present the strongest financially, if not the largest numerically, and the most representative nationally of nursery trade bodies. Some believe that further strengthening lies in the addition of members, which can and will be secured in the next year or so, as the financial condition of the trade improves. The alternative is increasing the membership and the dues of the state associations, so that they are in position to unite in constructive work along sectional or national lines. That course depends upon the state associations' strengthening their own ranks.

FEDERAL NURSERY AIMS.

A neighboring nurseryman repeatedly informed me of a large federal nursery project under the direction of the Tennessee Valley Authority. This nursery project was, according to my neighbor, planted on a grand scale, including all sorts of nursery stock—ornamentals, shade trees, fruit trees, perennials and the whole list.

In view of the fact that the story seemed unreasonable, I finally wrote to the Tennessee Valley Authority for information. A copy of the reply follows, explaining the situation thoroughly:

The Tennessee Valley Authority is not interested in entering the general field of producing nursery stock customarily available in private nurseries. The forestry division is primarily occupied with soil erosion prevention work and similar forestry matters. The soil erosion activities of the division involve a certain amount of reforestation of badly gullied lands in order to establish vegetative cover and so hold the soil. No broadcast reforestation of these erosion lands is being done.

In seeking material for carrying on this gully planting the forestry division of the Tennessee Valley Authority found that adequate supplies of the species of trees needed—black locusts, Virginia scrub pine, shortleaf pine and common red cedar—were not available in sufficient quantities and at a sufficiently low price to supply the Tennessee Valley Authority C. C. C. camps with material. With this in mind we have found it necessary to grow our own stock of these and such other species as we may require, and we are not interfering with the business of private nurseries producing ornamental and shade tree stock.

On the contrary, the effect of the forestry and crop planting program of the forestry division of the Tennessee Valley Authority has just the opposite influence. A widespread interest in the whole subject of planting of trees and the reforestation of land has been aroused by our work. Therefore, as the Tennessee Valley Authority does not sell any nursery stock at all for the purpose, but uses it in its own work, nurserymen need have nothing to fear from our operations. The forestry division of the Tennessee Valley Authority is stimulating general interest in tree planting.

(Signed) Edward C. M. Richards,
Chief Forester.

A. E. Wohlert, Narberth, Pa.

PROTESTS GARDEN CENTER.

Declaring that the practices of the Berkshire Garden Center are "sapping the lifeblood from every nurseryman in this part of the state," William Waldron, proprietor of the Balburnie Gardens, Stockbridge, Mass., has announced that he will move his nursery to Hastings upon Hudson, N. Y., turning back into a cow pasture the land he has planted to nursery stock.

Mr. Waldron has objected to the plant sales and exchanges held by the garden center some time ago. He is quoted by the Eagle, Pittsfield, Mass., as saying in part ". . . I am an ardent champion of garden centers if they are truly garden centers whose function is to give knowledge in the horticultural field. But when it comes to unfair competition such as shown at the Berkshire Garden Center it is time something was done."

A meeting of nurserymen was scheduled at the Balburnie Gardens July 28, to discuss the matter. Fred Baker, of the Northeastern Nurseries, was to be the principal speaker.

EXOCHORDAS.

Although the exochorda, or pearlbush, is not new by any stretch of the imagination, it is infrequently used in modern landscape work and it is doubtful if the two most desirable forms, E. Giraldii and its variety Wilsonii, are available in the American nursery trade. The common pearlbush, E. racemosa, the E. grandiflora of the trade, is the species usually offered. It is a beautiful shrub, too, but even it is rarely seen in home plantings.

The front cover illustration shows a mass planting of the common pearlbush displaying its large white flowers among other shrubbery. The plants are equally if not more adaptable as specimen shrubs. Rehder states that E. Giraldii is even handsomer than the preceding species, particularly the variety Wilsonii, which is of more upright and vigorous habit and more floriferous than the type. E. Korolkowii is more compact but not so free-flowering as the other species.

The best method of propagation is by seeds sown in spring after being stratified over winter. Cuttings taken from forced plants during the winter root fairly well and much quicker and better than cuttings taken from outdoor plants in summer. Layers root slowly.

The exochordas may attain a height of ten feet; their habit of growth is open and graceful, and in a breeze, the thin leaves flaunt their gray underside. Because of the erect, loose growth, the shrubs sometimes get leggy in old age, but greater compactness can be induced by annual pruning after the flowering period.

The common name refers to the pearl-like buds. Those of racemosa are white, while the buds of Giraldii take on a pinkish cast because of the red calycees, which are green on the former and show between the five petals. The showy blooms appear in 6 to 10-flowered racemes.

The chief reason for the lack of interest in exochordas is probably the fact that the shrubs transplant with some difficulty, especially large specimens. This drawback can be overcome largely by using smaller plants and handling them balled and burlapped. A little well directed publicity, together with a display of the shrubs while they are in bloom during April and May, would quickly bring these showy, graceful plants into greater favor.

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[Registered U. S. Patent Office]

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Vol. LXII **AUGUST 15, 1935** **No. 4**

Chlorosis of Ornamentals

Recommendations for Treatment of Trees in Alkaline Regions Given by L. C. Chadwick, after Two Years' Tests at Ohio State

During the past few years considerable chlorosis, yellowing of the leaves, has occurred on ornamental plants in alkaline regions. The trouble has been especially serious with pin oaks while sweet gums have fared only slightly better. While the chlorotic condition has been the most serious with street trees planted between the curb and the sidewalk, much yellowing of the foliage has occurred on lawn trees and in nursery blocks. Because of the consistent demand for information regarding possible means of obviating the trouble, tests have been conducted toward that end at the Ohio State University during the past two years. While the results have not been entirely conclusive, they have given the writer ground for temporary recommendations.

Symptoms of Chlorosis.

The first symptom of chlorosis on pin oak is the foliage's first becoming yellowish green and then yellow. Further developments occur in the curling of the leaves and in the appearance of dead portions around the margins and at the tips. Finally the leaves die and the small branches do likewise. This condition eventually brings death to the tree. How long a lapse of time occurs between the first signs of chlorosis and the death of the tree is difficult to forecast. In a period of about three years some trees have reached a stage where they are no longer of any ornamental value.

While yellowing of the foliage of ornamental plants may be caused by a number of different conditions, the one considered here may be fairly surely attributed to the lack of available iron for the leaves. This condition occurs most readily in soils excessively high in calcium or other substances that may cause an alkaline reaction. Under such conditions, although sufficient quantities of iron are found in the soil, it may be in an unavailable form or it may become unavailable after entering the plant.

Treatments.

A survey of the literature on this subject will show that treatments to overcome this physiological trouble have dealt with such methods as fertilizing with iron salts, spraying with solutions of iron and injection of crystals or solutions of iron salts directly into the trees. These have given variable results in different parts of the country and with different species of plants. Spraying with iron salts has proved successful for overcoming chlorosis of pineapples and citrus fruits. Injections of iron salts into holes bored in the trunks of trees of populus species and citrus fruits have also met with success in some sections. Applying iron to the soil has been variable in its results.

Various quantities of ferrous sulphate have been applied to pineapples as sprays. As high as ten pounds to fifty gallons of water have been used, and this strength was effective and not harmful to the plants. Generally much weaker strengths have been used. While the spraying is quite easily performed, it does not seem to be so lasting in its results as the other methods of application. Since spraying seems to be effective only on the leaves present at the time the job is done, it becomes necessary to spray two or three times a year to reach all of the leaves and probably at least for a number of years in succession before the plants return to a healthy condition.

Injection Method.

Although somewhat laborious and objectionable to many people, the injection of iron into the plant is, based on current literature, the most positive means of overcoming chlorosis. Different salts and different methods of injection have been tried with varying degrees of success and labor involved. The most cumbersome method is the injection of solutions of iron salts by the use of suspended containers with a tube attachment running to the hole. The placing of the iron salts in the holes bored in the tree trunk is less laborious and has proved effective in a number of cases.

Some recent work in Arizona with chlorotic orange, grapefruit and lemon trees has shown that ferric citrate placed in bored holes has given the quickest and most permanent results of any treatment. The use of ferrous sulphate in this way was not quite so effective. Soil treatments with ferrous sulphate, both dry and in solution, did not prove so effective as the injection of the salts.

The variability of soil treatments is due in part, at least, to the fact that some investigators have apparently overlooked the necessity of having the iron remain in an available form after being applied to the soil. Plant physiologists have reported that ferrous salts are available in soils testing pH 6.7 or lower, a slightly acid condition. Ferric salts appear to be readily available only below pH 4.6, an extremely acid condition. Consequently, even ferrous salts applied to highly alkaline soils may be readily available for only relatively short periods after application, if at all.

This fact would be especially true if the iron salts were applied to the surface of the soil in a well distributed manner so that the soil solution might easily render it insoluble or cause it to be in a form easily precipitated in the plant and not available to the growing tissue.

Use of Sulphur.

This fact has led the writer in most of the tests conducted to use an acidifier, such as sulphur, with the iron salt and to place it in holes well distributed beneath the spread of the branches. This practice should act in two ways to keep the iron more available while in the soil. First, the sulphur should tend to increase the acidity of the soil solution, and second, the iron is in such quantities in the small holes that the normal soil solution does not soon render it unavailable.

Two additional facts seem important when attempting to overcome chlorosis by treating the soil. Applications of iron should be made at a time when the roots are active and capable of absorbing elements from the soil. Although no tests have been run to determine the supposition, it is probably best to make the application at the start of the spring period of growth. Furthermore, sufficient water, preferably nonalkaline water, should be applied after the application to maintain an ample supply of moisture in the soil. This statement is supported by the fact that trees treated this summer have reacted much quicker than those treated a year ago. Last summer the soil was exceedingly dry while this year ample rainfall has occurred.

Treatments on Pin Oaks.

During the past two summers pin oaks have been treated by spraying with five-tenths and five per cent solu-

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tions of ferrous sulphate; plants have been injected with ferrous sulphate, and soil treatments have been made. The injection method was performed by boring three holes, distributed at equal intervals around the trunk, with a ⅜-inch bit. The holes were made about one and one-half inches deep. These holes were filled with ferrous sulphate and then stoppered with a cork. With the soil treatment, in working with trees of twelve to fourteen inches' caliper, forty to fifty holes, made in the usual way of punch-barring when applying fertilizer, were distributed evenly beneath the spread of the branches. In these holes were placed the ferrous sulphate and sulphur, calculated at the rate of one-half pound of each per inch of the diameter of the trunk of the tree. Some were treated with ferrous sulphate alone. This season, in addition to the ferrous sulphate and sulphur, some trees received five pounds of a 10-6-4 fertilizer per inch of the diameter of the trunk. At the end of the first month after the treatment last summer, the only tree to show improvement was one treated with the combination of ferrous sulphate and sulphur. The tree this spring was fully recovered. Trees that were injected were greatly improved. Those treated in the other ways showed little improvement.

This Year.

Ample rainfall during the current summer has apparently brought about a more encouraging situation with the trees treated this June. At the end of the first month all of the trees treated, regardless of the method employed, showed considerable improvement, and some of those treated with the combination of iron and sulphur were almost completely recovered. Additional data will be taken later.

In closing, may the writer emphasize that to overcome chlorosis of pin oaks the treatment, whatever method is employed, should be made as soon as the first yellowing appears? At this stage the results are much more quickly apparent. In cases where the soil is poor or the trees have not been fed, the inclusion of the complete fertilizer will justify the additional expense.

CHET G. MARSHALL.

Chet G. Marshall, Arlington, Neb., recently elected to the executive committee of the American Association of Nurserymen, is a member of a family long active in horticultural projects in Nebraska and the surrounding states. He is secretary and office manager for Marshalls Nurseries, Arlington, founded by an uncle, George A. Marshall, with Chester C. Marshall, in 1887.

Mr. Marshall was born in Arlington in 1883 and practically grew up in the nursery business. From 1902 to 1904 he was laboratory and assistant field manager of the department of horticulture of the Nebraska School of Agriculture. He traveled in the interests of Marshalls Nurseries, selling trees, from 1904 to 1909. Secretary of the Nebraska Horticultural Society for several terms, he served the organization as president in 1919. During 1913 to 1924, he was secretary and manager of the Central Fruit Growers' Association, in Nebraska City. In 1915 he returned to Marshalls Nurseries, where he has remained.

Besides having served several years on the executive board of the Western Association of Nurserymen, Mr. Marshall has also been president of the group. In the Retail Nurserymen's Association he has held similar positions. Mr. Marshall was also first president of the Nebraska Nurserymen's Association, with a long record on the executive committee as well.

DUTCH ELM DISEASE CONTROL.

Efforts to eradicate the Dutch elm disease are still concentrated in the area of 5,000 square miles in New York, New Jersey and Connecticut, around New York city, where scouts of the United States Department of Agriculture found a widespread infection that threatens the extinction of the American elm. Within that area many new cases of the disease have been found and many dead and dying trees have been destroyed this spring and summer, according to Lee A. Strong, chief of the bureau of entomology and plant quarantine. Scouting for the disease has not been done this season in states such as Indiana, Maryland, Ohio and Virginia, where from one to eleven infected trees have been found in previous years.

Chet G. Marshall.

Late reports from Dutch elm disease eradication headquarters at White Plains, N. Y., show that 9,181 cases have been confirmed since the campaign began last summer. Of these, 8,438 trees have been destroyed. In addition, 493,031 dead and dying trees have been felled and burned, and 389,389 more have been marked for destruction. Although these trees are not all known to be infected with Dutch elm disease, sampling has demonstrated that it is present in a considerable percentage of them and thus they may be sources of the disease for other trees. Furthermore, many such trees are infested by beetles which can carry the disease organisms, so that their removal definitely aids the eradication campaign through eliminating many possible carrying insects.

In the infected area, Mr. Strong says, wilted and discolored leaves and twigs are considered symptoms of Dutch elm disease. For a definite diagnosis, however, cultures are made from specimens of the suspected trees at the department's laboratory at Morristown, N. J. Here plant pathologists can make 1,000 tests a day if necessary to determine the presence of the fungus.

About 1,000 men are now scouting for symptoms of Dutch elm infection and 1,500 are engaged in destroying condemned trees, thus removing dangerous sources of new infection. June, July and August, Mr. Strong points out, are the best months for scouting. The characteristic wilt and discoloration are most apparent then. Later in the season injuries caused by other diseases, storms and insects tend to obscure the typical external symptoms.

The bureau of entomology and plant quarantine has a school in Bergen county, N. J., for training Dutch elm disease scouts. Here men sent by the relief administration, many of them from large cities, are taught how to tell one kind of tree from another, how to recognize the symptoms of Dutch elm disease, how to report their findings. Finally, the scouts are taught how to climb trees, beginning with small ones and ending with large, widespreading elms that can be scaled only with the aid of ropes. As soon as this preliminary training is over, the men are organized in two-man crews and assigned to a district to examine every elm.

CONNECTICUT NURSERIES.

During 1934 the number of nurseries granted inspection certificates in Connecticut totaled 381, an increase of nineteen over 1933, according to the report of Dr. W. E. Britton, state entomologist, just published. His classification by size showed twenty nurseries to be of fifty acres or more, forty-two between ten and fifty acres, thirty-three from five to ten acres, eighty-nine from two acres to five acres and 197 of one acre or less. From these figures it will be seen that slightly over half of the number of nurseries certified were of one acre or less and an additional one-quarter of the total were nurseries of from two to five acres.

The area in Connecticut nurseries in 1934 was 4,659 acres, an increase of fourteen acres over 1933. Altogether, thirty-seven new names were added and eighteen were discontinued since the previous year. Twenty nurseries on the list for 1933 were included on the 1934 list under different names.

SALES, COLLECTIONS BETTER.

The past spring season has been decidedly different than a year ago, or in the preceding eighteen months. The demand for a general assortment of nursery stock has been very good, which enabled us to close out all staple lines, so much so that we had no carry-over for two-year growing.

Collections have been different, much better than formerly and more like normal times. Many inquiries for stock not available lead us to look forward to a good demand this coming season. Prices are on the upgrade, but still considerably below the scale that will return very much profit, and like all other lines of production, nursery stock will make a slow recovery, but we hope a permanent one.

Marketing agreements have helped some, but are now in a fair way to be discarded and set aside by adverse court decisions. Supplies for the coming year are only moderate, with a considerable portion already sold.

Milton Nursery Co., Milton, Ore.

Cost Finding in the Nursery

Applications to Problems of Wholesale Grower Detailed in Supplement to Address by John Surtees, of Outpost Nurseries, at A. A. N. Convention

The section in the system devoted to cost finding for the wholesale grower is based on different lines from those for the retailer. The wholesaler's problems are not nearly so complicated. He does not grow so many varieties, and usually what he does grow is planted out in whole blocks, with the idea of selling the stock within a few years. He is not keen about growing large specimen stock, a department usually left to the retailer. Certain items of the wholesaler's stock are grown for one or two years only, then placed in storage. The stock thus placed in storage is for sale the following season. Should any of this storage stock be left over at the end of the season, it is either destroyed or returned to the nursery for further growth.

The method advocated as the simplest and most practical may be known as the block system of cost finding and, differing from the retail nursery plan, can be tied up with the general books of the concern, if necessary. It can be used in any type of nursery where large quantities are specialized in—perennials, vines, roses, fruit trees, flowering shrubs, deciduous trees. Whether a general assortment is grown or only one specialty, the system can be used.

The system applied to fruit trees is used for the purpose of illustration. The course of costs over a period of three years—two years for growing and the third year for storage—is followed.

Operation of System.

The working of this system requires one each of the following cost sheets for each block:

1. Perpetual Inventory—This sheet gives the block number, acreage and contents at the head. Then the sheet is spaced off by months, with one line for each month. This spacing is divided into four sections as follows:
   (a) Giving inventory at beginning of period, with the price at which the stock was taken in. Then follows a record, by months, of all stock planted, extended at the purchase price, including freight and handling charges.
   (b) Giving a record of all losses in the block, monthly, extended at the inventory figure.
   (c) Giving the total sales from the block, monthly, and the income derived from same.
   (d) Giving the balance in hand at the end of each month, showing quantities available for sale.
2. Daily Labor Record—On this sheet is entered daily the total value of the direct labor, equipment and supplies used for the block. It is divided into five sections, as follows:
   (a) Labor for maintenance, including planting new stock.
   (b) Labor for digging orders.
   (c) Equipment used.
   (d) Supplies used.
   (e) Totals.
3. Monthly Labor Summary—This sheet is divided in exactly the same manner as the daily labor record, the monthly totals of which are transferred to this sheet.
4. Annual Summary—This sheet gives a complete analysis of all the information contained on sheets No. 1 and No. 3, in the following manner:
   (a) Income from sales (perpetual inventory sheet) from which the following deductions are made:
   (b) Cost of materials (perpetual inventory sheet).
   (c) Cost of losses (perpetual inventory sheet).
   (d) Direct labor costs (monthly labor summary).
   (e) Overhead charges (from general ledger).
   This overhead is applied in the ratio that expenses, outside of selling expenses, bear to direct labor.
   (f) Selling expenses (from general ledger).
   These expenses are applied in the ratio that they bear to the income from sales.

The system, as explained later, recommends that shipping expenses (g) and storage expenses (h) be prorated against the value of the sales. If this course is followed, then further deductions to take care of these items will be necessary.

The total of items "b" to "h," inclusive, deducted from item "a," will show the surplus (or deficit) made on that block at the end of the year.

Example.

The following example is taken from the system, which gives an illustration of costs on one block, covering three years' operations. It shows the annual summary at the end of the second year and will more clearly explain the working of this sheet:

(a) Income from sales.....			$4,000.00
(b) Material costs	$1,240.00		
(c) Cost of losses.....	137.80		
(d) Direct labor	600.00		
(e) Overhead charges (Assuming 100%) ...	600.00	2,577.80	
			$1,422.20
(f) Selling expenses. (Assuming 15% of $4,000.00)	600.00		
(g) Shipping expenses. (Assuming 5% of $4,000.00)	200.00		
(h) Storage expenses. (Assuming 5% of $4,000.00)	200.00	1,000.00	
Surplus at end of year			$ 422.20

The illustration in the script also shows that 12,000 trees were transferred to storage at the end of the year, and the cost of production up to that time was $61.81 per 1000. These should be added to the above surplus as follows:

12,000 trees to storage..$	61.81	$ 741.72
		$1,163.92

This total represents the surplus at the end of the period. If any deficit occurred in the previous year, such deficit is to be deducted, and the balance will show the net surplus for the two-year period. The figures, of course, are only arbitrary and are merely given to explain the system.

This method, carried out faithfully, will give an absolutely correct cost of a block of plants, no matter how many years it is necessary to keep the stock in the block. It keeps a perfect tab on the inventory and shows, every month, the quantity available for sale. It keeps a perfect tab on all direct labor. It places the overhead charges exactly in the right proportion against the block, according to the amount of labor spent on it. The selling expenses and shipping expenses are placed against the plants only in proportion to the amount sold, and the storage expenses only according to the amount sold from storage.

If two or more blocks are completely planted with the same varieties, then one set of sheets will cover the operations of such blocks.

If several varieties are planted in one block, only one sheet is required for the record of the labor and one perpetual inventory sheet, and one annual summary sheet for each of the varieties, the labor and overhead being distributed according to their quantity or value.

The only expense of operating this system is the partial time of the bookkeeper and a little extra time for the foremen and superintendent in making out clear and accurate reports. Once the force is trained in these methods, the system should run like clockwork. The record will show definitely what items are money-makers and enable the nurseryman to concentrate on those items and gradually eliminate those he is continually losing on, without knowing it.

Shipping Expenses.

The practice of charging packing and casing expenses, in addition to the quoted price, on trees should be considered as out-of-date. It is a continual source of annoyance to the buyer and is actually a source of loss to the seller. It is not at all in harmony with modern ideas of merchandising. Many firms are realizing that the practice creates a definite sales resistance and are quoting prices "packing and crating free."

The practice is a source of annoyance to the buyer, because the amount of what the packing charges are going to be is left entirely to his imagination. He is forced to guess these charges and usually he guesses wrong. Recently the writer came across a case where the packing charges were seventy-five per cent of the value of the stock. No doubt the seller was quite honest in his charge, but the annoyance to the buyer is clearly manifest.

The practice is a source of loss to the seller, because many times he makes the price of packing charges lower than his cost, rather than have his customer think both figures are too high. Even then, his customer may think the charges are exorbitant, and if a complaint is made, the nurseryman will cut the charge still further, rather than risk a quarrel with the customer.

From these two points of view alone, it is well worth while to include shipping expenses in the cost, as shown in the script. In this way the seller will get his full value for his packing and crating; the buyer will be saved a lot of trouble and inconvenience; a definite item of sales resistance will be broken down, and everybody will be happy.

Storage.

In dealing with the expenses of storage, some firms have attempted to distribute the expenses on the basis of sizes,

values and length of time the stock is kept in storage. This may be all right, but it involves a complex system, the accuracy of which can never be relied upon.

The simplest plan is to keep a separate account in the general ledger for all expenses connected with storage and prorate these expenses according to the amount sold from storage.

The method of handling these charges is fully explained in the script, and from the illustration of the annual summary given in this article, it is plainly shown how the ratio is prorated.

This system has the advantage that it charges these expenses only against stock that is actually sold. It is manifestly unfair to charge any portion of this expense against plants that have never been placed in storage, and as most stock left at the end of the season is destroyed, the expense can only be charged against the sales.

This short outline is given to show how simple and inexpensive it is to operate this system. The methods advocated may be extended or contracted to suit the needs of any particular nursery, but the principles, if faithfully carried out, will repay the user many times over, even in the first year of operation.

Coming Meetings

Announcements of Approaching Events

SOUTHERNERS' PROGRAM.

Following is the program for the annual convention of the Southern Nurserymen's Association, which will be held at the Atlanta-Biltmore hotel, Atlanta, Ga., August 29 and 30:

AUGUST 28, 9 P. M.
Meeting of Georgia nurserymen.

AUGUST 29, 8 A. M.
Registration.
Call to order.
Invocation, by Dr. H. W. Cox, president of Emory University, Atlanta.
Address of welcome, by Mayor Key of Atlanta.
Response, by C. T. Smith, Concord, Ga.
Report of committee on arrangements, by Cobb Caldwell, Atlanta.
President's address, by W. L. Monroe, Atlanta.
Appointment of committee on president's address.
General introduction.
Appointment of special committees.
"Activities of Our National Government in Various Programs of Landscape Improvement," by a speaker from Washington.
"Sales Suggestions," by Harry L. Nettles, Biltmore, N. C.
"The Need of a Definite Program in Planting Public Institutions," by Kendall Weisiger, Atlanta.
"Forestry in the South," by a speaker from Duke University, Durham, N. C.

AUGUST 29, 3 P. M.
Baseball game at Ponce de Leon park—Atlanta vs. New Orleans.

AUGUST 29, 8 P. M.
Banquet, at Atlanta-Biltmore hotel.

AUGUST 30, 9 A. M.
Call to order.
"Soil Building and Erosion Control," by J. Lee Smith, of the University of Florida, Gainesville, Fla.
"How the Nurseryman May Coöperate with His State Entomologist in Eliminating Unfair Competition," by M. J. Yeomans, Georgia state entomologist.
Illustrated lecture on "American Landscape Architecture," by Dr. T. H. McHatton, of the University of Georgia, Athens.
"Relationship of Building Architecture to Landscape Architecture," by Daniel H. Bodine, Atlanta.
Report of secretary-treasurer, by W. C. Daniels, Charlotte, N. C.
Reports of standing committees.
"State Laws," by Henry Chase, Chase, Ala.

AUGUST 30, 3 P. M.
Trip to Stone Mountain.

TO MEET WITH GARDENERS.

Leading horticultural societies will be represented at the silver anniversary banquet of the National Association of Gardeners, which takes place on the evening of the second day of the convention of the association, which will be held at Pittsburgh, Pa., August 20 to 22.

Representatives will be J. J. Grullemans, Mentor, O., American Association of Nurserymen; H. O. Evans, Bedford, O., American Gladiolus Society; Oliver Lines, Elkins Park, Pa., American Orchid Society; Harry W. Claybough, Franklin, Pa., American Peony Society; E. A. Ward, Green Village, N. J., American Rock Garden Society; Alex Michie, Glen Head, L. I., Horticultural Society of New York; Prof. E. I. Wilde, State College, Pa., Pennsylvania Horticultural Society; Ed. Ludwig, Pittsburgh, Pa., Society of American Florists; T. P. Langhans, Pittsburgh, Pa., Chrysanthemum Society of America. Mr. Langhans will be one of the speakers at the banquet; it is interesting to note that it was in connection with the fall exhibitions of the Chrysanthemum Society of America that some of the early meetings of the National Association of Gardeners were held.

Other speakers on this occasion include Hon. Martin L. Davey, governor of Ohio; Mrs. William H. Mercur, past president of the Garden Club of Allegheny County; A. D. Taylor, Cleveland, O., landscape architect and author; William N. Craig, Weymouth, Mass., past president of the National Association of Gardeners.

CONCLAVE AT SAN DIEGO.

Through the combined efforts of the California-Pacific exposition at San Diego, Cal., and the California Association of Nurserymen, there is to be held at San Diego from September 26 to 28 the greatest conclave of nurserymen, florists and other horticulturists that has ever been gathered together in the west. For over a year the nurserymen's association has been planning this big event, arranging the program and the accompanying trade exhibits, and since the advent of the publicity department of the California-Pacific exposition the nurserymen have had added help in this great event.

The setting for this convention is without a doubt the best that any such affair has had for a great many years. The site of the exposition is where the great fair was held years ago, and ever since then it has been kept up by the state and the park department of San Diego. With this marvelous start of buildings and finely kept grounds, the present exposition association had a head start that no fair has ever had before and probably never will have again. The grounds to begin with were well planted with old trees of a subtropical nature, but to this planting has been added the finest material that nature and the combined efforts of the best nurserymen of California could provide.

In addition many California firms have taken large spaces for permanent outdoor exhibits during the fair, and these will be at their best by September. The exhibitors have been working night and day for months to get their displays installed. In addition to the fine exhibits and specimens to be seen, it will be a splendid opportunity for visitors to get a comprehensive view of the achievements covering the past century in western America, as well as to see the pageants displaying man's achievements in the arts and sciences, industry and education.

Combined with all this the San Diego Floral Association is attempting the greatest flower show that has ever been staged in the west. This, with the trade exhibits, will make a visit to the fair a worth-while item in the year's expenses of any nurseryman or florist.

Following is a list of firms that have already taken space for trade exhibits, all from California unless otherwise stated:

Armacost & Royston, Inc., Los Angeles.
Armstrong Nurseries, Ontario.
H. L. Baake & Son, West Los Angeles.
Badger-Tanner Nurseries, Rancho Santa Fe.
E. P. Bradbury, Las Tunas Cactus Ranch, Fontana.
Briggs Floral Co., Encinitas.
Campbell Seed Store, Pasadena.
Richard Diener, Oxnard.
Henry Eichholz, Waynesboro, Pa.
Howard E. Gates, Anaheim.
Germain Seed & Plant Co., Los Angeles.
Hagenburger's Specimen Plant Gardens, West Los Angeles.
James W. Harvey, Gibson's Hybrid Gerbera Gardens, Encinitas.
Paul J. Howard's Horticultural Establishment, Los Angeles.
Howard & Smith, Montebello.
Jendresen's Petunia Gardens, Encinitas.
Mrs. R. F. Kado, Wilshire Rockcrafts & Cactus Garden, Santa Monica.
McCabe Cactus Gardens, San Diego.
Montalvo Begonia Gardens, Ocean Beach.
Soledad Rock & Water Gardens, Pacific Beach.
Theresean Plant Co., Oceanside.
Roy F. Wilcox & Co., Montebello.
Williams & Macpherson Subtropical Nursery, Encinitas.
Josephine Yoch, South Coast Park Nursery, Encinitas.

SCIENCE COURSE AT BOSTON.

The science course for gardeners given under the auspices of the Boston branch of the National Association of Gardeners and the Massachusetts Horticultural Society at Boston, Mass., last year will be offered again on an enlarged scale this coming season. The first year course will be repeated and, in addition, a second year or advanced course will be given. Dr. E. J. Haertl will again be in charge of the first year work, consisting of plant morphology, plant physiology and systematic botany. The advanced course will include plant pathology, entomology, genetics and soils and fertilizers. The names of the instructors for these will be announced at an early date.

The opening date for the course has been set for Wednesday evening, September 18, and the courses will run simultaneously. In other words, the first course will start at 7 p. m. and the second course at 8:30 p. m., making it possible for a student to take both courses the same evening. Florists, superintendents of estates, gardeners, gardeners' assistants and, in fact, anyone sincerely interested in scientific horticulture are eligible. Further information may be obtained from Raymond E. Smith, secretary of the Boston branch of the National Association of Gardeners, 250 North Main street, Andover, Mass.

Arno H. Nehrling, Director.

School Ground Landscaping

Carl F. Mack, Chicago Landscape Architect, Tells Principles of and Gives Plans for Beautifying School Grounds as a Part of Community Development Programs

Landscaping of school grounds and play areas should head the list of community development programs, declares Carl F. Mack, landscape architect of Chicago, in an article published in the June issue of School Executives Magazine under the title, "Beautifying the School Grounds." The article shows clearly how proper landscaping helps in creating a happy and harmonious effect and contains suggestions worthy of consideration by nurserymen who may have similar opportunities to promote business in their communities.

During the past few years, Mr. Mack states, great improvements have been made in modernizing schools, and architectural beauty has been added to all new school buildings. The old box-like school buildings are fast disappearing, due to the rapid growth of communities and new demands for improved conditions. Hundreds of modern and beautiful schools are now under construction.

In connection with most schools, playgrounds are provided that add nothing to beautify the building and are, in many cases, in direct contrast—a sand or cinder-covered area with some play equipment seems to suffice.

Feasible Plan.

Reproduced on this page by permission of School Executives Magazine is a feasible landscaping development for school grounds, designed by Mr. Mack, whose explanations of the various features follow:

"First of all, the playground is surrounded by a double row of shade trees, one row outside the public sidewalk, the other row inside. A tall shrub border is also used, which may either hide a fence surrounding the property or act as fencing itself. At the rear of the building, a drive with a turn-around, to serve delivery trucks and automobiles, connects the two bordering streets. To the left of the turn, in the center of the building, a small conservatory for tender and potted plants will make an interesting entrance feature and will be of educational value to any school. In the center of the turn-around might be a fountain, which may either be highly ornamental or a shallow, plain pool.

"To the right of the drive, a school garden not only provides beauty, but also demonstrates the life of plants, a feature which is especially helpful and interesting to city children. The center bed may be planted with perennials, arranged in a herbaceous border. Each plant might be labeled with common and botanical names.

Encourage Plant Interest.

"Children should be encouraged to note blooming season, color and propagation of flowers and to apply the knowledge gained in planting flowers at home, either in pots, boxes or on the home grounds. On either side of the herbaceous border, two small areas serve for the cultivation of annuals, medicinal plants and herbs for seasoning. Even a few vegetables may be included; asparagus and peppers are interesting plants.

"A study of the germination of annuals, their rapid growth, season of bloom and variation in colors will prove worth while and encourage gardening at home. Interesting observations might be made of the pretty seed pods and fruits of plants like Lunaria annua (honesty) and Physalis Franchettii (Chinese lantern plant, perennial) and of the adaptability of certain flowers to being dried while in bloom, such as Gomphrena globosa (globe amaranth) and Helichrysum bracteatum (strawflower).

"The center of the grounds is used for the play area, which should be equipped with combination gymnastic frames, parallel bars and other apparatus.

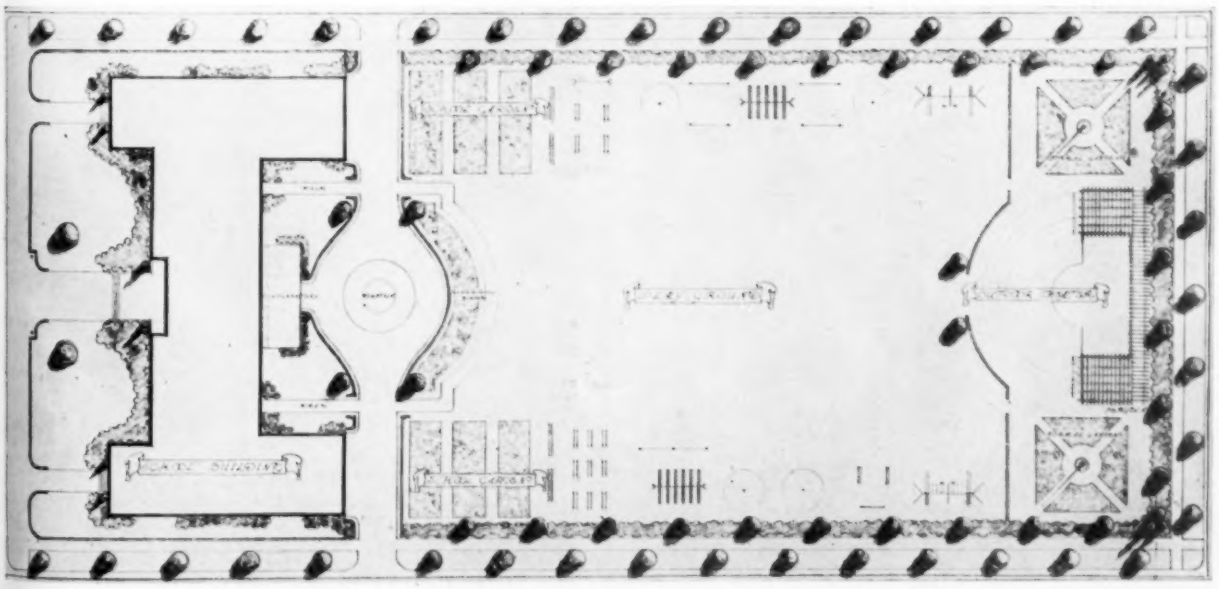
Outdoor Theater.

"To the right of the playground an interesting feature—the outdoor theater. The stage is sunken and seats are provided in a semicircle on terraced ground. Two small buildings flank either side of the stage, one of which may be used as a resting place for the actors and the other as a comfort station. A pergola above the flat roofs connecting the two buildings will add architectural beauty and also support a number of vines, which will provide shade and decoration. The many uses of the outdoor stage are evident, and the theater will prove a helpful addition to the school grounds.

"Formal gardens on either side of the theater, centered by ornamental flagpoles, will enhance the setting. The beds of these gardens may be planted to annuals, perennials or roses. A study in color combinations may be obtained, or the beds can be of turf, with neat gravel walks, and used for outdoor school flower shows.

Stimulate Flower Shows.

"Now that the grown-ups have arranged several yearly garden and flower shows, with prizes, school children should be allowed the same opportunities to exhibit their skill in growing flowers. Early in the season, each pupil wishing to participate should register



Landscaping Plan for School Grounds, with Outdoor Theater, Conservatory and School Gardens.

the variety of flower or plant he intends to exhibit, either a number of cut flowers, a potted plant or a well arranged small window box. The ambition for being the best gardener will do much to create interest in cultivating flowers and encourage the application of the newly gained knowledge made possible by the school garden and conservatory.

"Naturally, the front of the school building should have an interesting foundation planting, with a sufficient variety of shrubs to add to the study of hardy shrubs. Window boxes are a much neglected feature. They should be used wherever possible, to beautify the building and to induce students to plant boxes for their homes.

Other Desirable Features.

"Other worth-while features for the grounds are an accurately oriented sundial, a kiosk for a thermometer and barometer, topped with an ornamental vane, and various bird houses among the shrubbery.

"All nursery stock planted on the school grounds should be selected with a definite purpose, to create a harmonious landscape and yet represent a collection of properly labeled trees and shrubs for study.

"It is undoubtedly true that school property, developed and landscaped by the methods suggested, will be of great benefit to the students, develop their love for plants and also leave a lasting impression of floral beauty. Children influenced by this training will soon accept gardening as a hobby and will seek an outlet for their natural expression by creating attractive gardens and floral displays at home."

ROSE MEN AT TEST GARDENS.

"We had great times with visitors—trade and amateur—from all parts of the country, and our test and show gardens (covering about four acres) were the objective of excursions for many garden clubs," states the Rose Letter of August 1 from the Jackson & Perkins Co., Newark, N. Y. "On June 29, we had a gathering of bigwigs of the American Rose Society and leaders of the rose world."

The photograph reproduced on this page was taken at the J & P gardens on that day.

Describing the illustration, the letter continues: "From the left, Dr. J. Horace McFarland holds a Nigrette rose and cogitates in an attitude of Hamlet whether that rose is 'to be or not to be.' Next to him is Leonard Barron, president of the American Rose Society, talking shop with another president, W. O. Ingle, of the Rochester Rose Society, and between them is Clarence A. Davis, of the Buffalo Rose Society, umpiring the arguments. In the distance we see Gene (for genial) Boerner 'soaking in' the various comments. Dr. T. Allen Kirk, president of the Roanoke Rose Society and trustee of the American Rose Society, is an adept of the rose as well as of the scalpel. Next is yours truly (J. H. Nicolas) just listening. In the foreground is another Frenchman, Jacques Legendre, of Henry A. Dreer, Inc., Philadelphia, whose opinion on roses we value highly. In the distance appears the slim figure of G. A. Stevens, secretary and mainspring of the American Rose Society, perhaps falling in love with a pink rose, his first offense! A keen judge of roses is C. R. McGinnes, Reading, Pa., trustee of the American Rose Society, and the last at the right is jolly 'Charlie' Perkins, president of the Jackson & Perkins Co., who is never so happy as when he is going among rosarians and whose supreme ambition is to grow the best roses in America.

"Among other visitors at different times, we had R. Marion Hatton, West Grove, Pa.; L. C. Bobbink, Rutherford, N. J.; Charles H. Totty, Madison, N. J.; P. J. Van Baarda, of Breck's, Boston; Joseph H. Hill, Richmond, Ind.; A. F. Watkins, of the Dixie Rose Nursery, Tyler, Tex.; George B. and Mary Hart, Fairport, N. Y. All were interested mainly in peeping through the future and studying the products of the foremost hybridizers of the world sent to Newark for testing and eventual dissemination if they pass muster. The ultimate fate of these novelties does not rest altogether on our own judgment; the opinion of such experts has much weight; combined with the impressions of the multitude of lay visitors ('Jones pays the freight'), it gives us such a broad viewpoint that we are seldom mistaken in our conclusions and selection of varieties to put in commerce."

Bigwigs of Rose World at Test Gardens of Jackson & Perkins Co.

PROGRAM NATIONAL ROSE GROUP.

A preliminary program for the annual meeting of the American Rose Society, to be held at the Seneca hotel, Rochester, N. Y., September 9 to 12, has been completed. The program, scheduled on eastern standard time, follows:

MONDAY, SEPTEMBER 9.

11:00 a.m.—Judging Rochester rose show.

1:00 p.m.—Opening of show by Mayor Stanton and presidents of garden clubs of seventh district, New York State Federation of Garden Clubs.

1:30 p.m.—Judges' luncheon, Rochester Rose Society host.

3:00 p.m.—Meeting of trustees, American Rose Society.

8:30 p.m.—Get-acquainted smoker for American Rose Society and Rochester Rose Society.

TUESDAY, SEPTEMBER 10.

8:00 a.m.—Registration of members and guests (registration fee, $1). Each registrant will receive a badge which will entitle him to attend all lectures and Rochester rose show and to free transportation on tours if needed. Tickets for luncheon, $1, and for banquet, $2.25, should be obtained at registration desk.

9:00 a.m.—Address of welcome, by John P. Boylan, president of the Rochester chamber of commerce.

9:15 a.m.—President's address, "The Exhibition Rose," by Leonard Barron, New York.

9:30 a.m.—"Exhibiting and Judging Roses," address, by G. F. Middleton, Seattle, Wash.

11:00 a.m.—"Growing Roses for Exhibition," address, by Dr. Herman Bozer, Buffalo.

1:00 p.m.—Luncheon.

2:30 p.m.—"Latest Information Concerning Rose Diseases," address, by Dr. L. M. Massey, Cornell University, Ithaca.

3:30 p.m.—General discussion.

4:00 p.m.—Annual business meeting of American Rose Society.

7:00 p.m.—Banquet of American Rose Society (informal). Toastmaster, Florus R. Baxter, Rochester. Speakers, Charles Stanton, mayor of Rochester; Patrick Slavin, superintendent of Rochester parks, and distinguished guests. Presentation of American Rose Society certificates and annual awards.

8:30 p.m.—"The Newer Roses," illustrated lecture, by Dr. J. Horace McFarland, Harrisburg, Pa.

WEDNESDAY, SEPTEMBER 11.

7:00 a.m.—Pilgrimage to rose fields, test gardens and hybridizing laboratories of the Jackson & Perkins Co., Newark. (This pilgrimage will start promptly, as the journey is nearly forty miles.) Free transportation will be provided for those wearing A. R. S. badges, who desire it.

12:00 noon—Barbecue luncheon at Newark, offered by the Jackson & Perkins Co.

2:00 p.m.—Return to Rochester, stopping en route at the perennial and general testing gardens of Hart & Vick, Inc., and at the rose-growing greenhouses of George B. Hart, Inc.

Visit Rochester parks and local gardens.

THURSDAY, SEPTEMBER 12.

7:00 a.m.—Pilgrimage to Buffalo as guests of the Niagara Frontier Rose Society to arrive at Buffalo 10:30 a.m. daylight saving time.

Afternoon—Trip to Niagara Falls.

ROSE SHOW AT ROCHESTER.

Plans are nearing completion for an extensive rose show to be staged under the sponsorship of the Rochester garden clubs at Convention Hall, Rochester, N. Y., September 9 and 10. Under the general chairmanship of William O. Ingle, work is progressing rapidly. Many of the classes are already nearly full. Preparations are being made to handle a record attendance from all parts of New York state.

While the rose show is in progress, Rochester will be host to the American Rose Society, which will convene at the Hotel Seneca for a series of meetings from September 9 through September 11. Delegates from all parts of the country are expected to attend this convention.

Judges at the Rochester rose show will be C. F. Middleton, Seattle, Wash.; Dr. J. Allen Kirk, Roanoke, Va.; J. R. McGinnes, Reading, Pa.; F. Marion Hatton, West Grove, Pa.; Dr. Herman Bozer, Buffalo, N. Y., and Dr. Adrian S. Taylor, Clifton Springs, N. Y.

Little-Known Campanulas

Harebells Rarely Met in Gardens, Though Worthy a Place There and in the Nursery, Are Described by C. W. Wood

The genus campanula, from the Latin, meaning little bell, contains more than 200 species, a large number of which are favorite garden subjects. Many others of much garden value are still little known, and it is with a few of these that these notes are particularly concerned. There are still other campanulas with good reputations in other lands which seem poorly adapted to our climate, and some of these will be touched upon.

Campanula Carpatica.

The Carpathian harebell, C. carpatica, is too well known to need much comment, and a glance at catalogues will indicate that the same statement applies with equal force to its numerous varieties. But an examination of the actual material will show more often than not that the plants have evidently been grown from seeds and rarely show the true characteristics of the different varieties.

Campanula Turbinata.

The plant known as C. turbinata is a case in point. As usually seen, it is scarcely distinguishable from C. carpatica in either height of plant or size of flower, while as a matter of fact, C. turbinata is a much lower plant, just a few inches tall, and the flowers are larger, being a deep purple blue. The true turbinata would surely appeal to your customers if they saw it in bloom. It is comparable in spectacular beauty to C. Rainerii, and it is much easier to grow, resembling the type carpatica in its adaptability. All named forms of carpatica and turbinata, including compacta, haylodgensis, riverslea, White Star, Wilsonii and Standsfieldii, should be reproduced by vegetative means to insure true material. The main difficulty is to get the true plants with which to make the start. All of these varieties, if true, will make good items for the neighborhood grower.

Campanula Collina.

Not a few of the better class of campanulas have some undesirable features about them, being either biennial or difficult to grow. Not so, however, in the case of C. collina. This is a Caucasian species of which the downy leaves and stems would normally be taken as danger signals, but the actual performance of C. collina is all that one could ask for. Each 8-inch stem bears from one to ten violet, tubular flowers all during June and July, making a most desirable plant, of easy enough culture to suit the most exacting. Apparently, all it needs is a sunny, well drained situation. It is easily grown from seeds and comes true.

Campanula Cristalocalyx.

One occasionally sees the name C. cristalocalyx in literature, with high words of praise regarding its garden merit. Its actual performance in northern Michigan, the plants being from a number of sources and all checking with the botanical description, did not support its reputation; consequently, it has been discarded as unworthy of garden space. Its only recommendation is its long period of bloom, extending from June until frost; the small, violet-colored flowers on 30-inch stems have little merit.

Campanula Lanata.

While mentioning pet peeves, I think the much-vaunted C. lanata should be included, not that the species is without beauty, but rather because it does not act in my northern garden as it should. It comes from the Balkans, but is an exception to the many hardy campanulas from that region. As an example, out of about seventy plants of C. lanata in almost as many situations in the garden last year, just two were alive this spring, and last winter was a mild one. Where it is hardy, however, C. lanata should sell, being one of the few yellow campanulas and close to the best of that color. Aside from full sun and a perfectly drained situation, preferably a dry wall where not a hint of damp will rot its woolly leaves and crown, its requirements are few. Its woolly bells are a pleasing pale yellow, coming on 8-inch stems in July. Unfortunately, it is monocarpic, or at least has acted so with me.

Campanula Mirabilis.

Another monocarpic species, which through sheer beauty commands our attention, is C. mirabilis. Then, too, its advent into gardens was as thrilling as is the beauty of the plant. Plant historians tell us that just one specimen of the species has ever been found, and that with only one capsule of viable seeds. From these few seeds have sprung all of the mirabilis plants that have ever gladdened the hearts of gardeners. For description, I can do no better than repeat Farrer: "Take a silverless rosette of Saxifraga Cotyledon; stick into it a rather small-flowered pale blue Canterbury bell spike, and you will have C. mirabilis, that most ancient of all campanulas, a plant almost geologic in its antiquity." It requires little more than ordinary care for its well-being, good drainage together with a fair degree of moisture being its main requirement. In our climate, shade from the noonday sun seems to help it.

Campanula Macrorrhiza.

The rotundifolia group has given some of the best garden campanulas, and a number of them are well known to gardeners. That makes it all the harder to understand why one of the best, C. macrorrhiza, is the least known. Its easy growth, long-blooming habit (it blooms from June until frost in northern Michigan, almost fulfilling De Candolle's description when he says, "per totum anuum fere") and pleasing lilac color go to make it one of the most satisfying of the small bellflowers. As the specific name indicates, the plant grows from a thick rootstock, throwing up a mat of long-petioled, cordate leaves, from which spring innumerable 4-inch flowering stems. It has the reputation, owing, I suppose, to some unfounded statements in literature, of being hard to manage, but its performance in the garden leaves nothing to be desired. It grows here under the same conditions as the type rotundifolia and with the same ease.

Campanula Raddeana.

One of the better harebells not now common in trade channels is C. Raddeana, from the Transylvanian Alps. Easy to grow, satisfying in its glossy basal foliage and rich purple bells on 8-inch stems, it will surely become popular with gardeners when it is better known. It is suggestive of C. rotundifolia, though it differs in most characters, including larger, longer and more open bells. The plant grows readily in any light, well drained soil, doing best in northern Michigan in about one-third shade.

Campanula Sarmatica.

Harebells with tomentose leaves are so often difficult to manage that it is a pleasure to find C. sarmatica, which is not only easy to cultivate, but also has most of the other qualifications of a first-class plant. It is a subalpine from the Caucasus, throwing up 12 to 15-inch stems, loosely hung with thick, pale blue bells all during July and August. This is one of the best medium tall campanulas for local sales that I have ever handled. It is easily grown in any sunny to half-shaded spot that is well drained. There seems to be some confusion in its naming, another species, C. tomentosa, which is not even hardy here, often being sold as C. sarmatica, and vice versa.

Campanula Poscharskyana.

It is gratifying to note that C. Poscharskyana is coming to the fore in America, for it is one of the most satisfactory of the easily grown small harebells. Although it is probably not the most beautiful of its class, it compares favorably with most of them. It is of C. garganica persuasion, creeping more freely than the latter and throwing out quite prostrate sprays of violet blue flowers with deeply cut, recurved lobes from late May into July. With its beauty goes an amiability to do its best under all conditions, best results in my garden coming in an east wall. Satisfactory growth is made in practically all situations except deep shade.

Campanula Arvatica.

I had not intended to include any difficult species in these notes, but think C. arvatica may be mentioned with profit. In the first place, it is really not so hard as some would have us believe, and I imagine from my own experience that part of its bad reputation has come from gardeners' not realizing that it needs much lime. Given a limy medium, made up of limestone pebbles and little nutriment, it grows in broad mats, from which spring 2-inch stems carrying violet purple stars during June and July. In the climate of the middle west some shade during the middle of the day is helpful. To be sure, it is not a plant for the careless gardener, but it is so out-of-the-ordinary that it is worth some effort. It grows readily in pots.

Summer Meetings

Held by State Associations

OKLAHOMA CONVENTION.

The Oklahoma State Nurserymen's Association held its fourteenth annual summer meeting at Noble, Okla., Wednesday, August 7. The meeting was called to order by President W. E. Rey, Oklahoma City. The invocation was given by the Rev. Morris, of the Methodist Episcopal church, Noble.

The address of welcome was made by C. E. Garee, Noble. Dr. W. M. Moberly, Bentonville, Ark., responded. The report of the secretary-treasurer was read and approved.

The principal discussion of the day was on new varieties of fruit. W. E. Rey opened this discussion by telling of his visit to Ben Davis, at Tahlequah, and reported finding a pear there which has borne every year for thirty years. He emphasized the need of constant watchfulness for new varieties of fruit.

C. E. Garee displayed apples that were said to have come from a seedling tree. He also showed some fine peaches, weighing as much as three-fourths pound each, resembling the Elberta but ripening earlier. These peaches are known to be seedlings. He mentioned apricots that have not missed a crop for the last six years.

Jim Parker, Tecumseh, reported on two pears which have not failed to bear fruit for many years and one peach that has borne a number of years when other varieties were killed. He also emphasized the fact that in this search for new varieties there would be no attempt for any nurseryman to try to monopolize one of these varieties or try to secure exorbitant prices by their introduction. Bud wood would be passed between nurserymen in a effort to secure sure-crop fruits for Oklahoma.

Dr. Moberly recalled the time when Arkansas cut down the pears because of apple blight. He mentioned that the state now has many pears free of blight that bear fruit every year. He said he had a peach which is a constant bearer, ripening about ten days earlier than Mayflower. He also assured the nurserymen of his coöperation in the distribution of bud wood. He suggested that he would like to see a wider search on the Chickasaw plum, which he thinks will prove a source of valuable fruit.

Frank Sneed described a small regular-bearing apricot called Yale, also a sweet cherry found near Tahlequah, called Golden Cargo; it is a yellow cherry. He stated also that four crops of the last five had been produced on a peach resembling Mamie Ross.

A. G. Herschi, Oklahoma City, reported on currants, calling attention to the hardiness and general value of the native Oklahoma currant. He mentioned a wild bush grape and plum that Dr. Thoburn has discovered, which he thinks will be valuable in Texas nurseries.

W. C. Griffing, Beaumont, Tex., described a new variety of crepe myrtle which carries an extra-large plume of blooms of a deep red color, which he took to his nursery from New Orleans.

A display of grapes was brought by Prof. Frank B. Cross from the A. & M. College, Stillwater. There were sixteen varieties in this collection and Professor Cross called attention to the Golden Muscat, which is a superior variety. He also had nectarines of a dark color, called America.

Prof. D. C. Mooring offered the suggestion to nurserymen that they might help Texans by advising them to plant their fruit trees farther apart. He thinks close planting is the most harmful practice that he notices in home orchards.

A barbecue lunch was served in the park at noon. This barbecue had been arranged by Mr. Garee and his family and was greatly enjoyed by all.

The afternoon session was taken up with a discussion of new nursery laws.

A telegram of good wishes was received from Mrs. L. W. Foster, secretary of the Southwestern Nurserymen's Association. A letter was read to the association from J. M. Ramsey, Austin, Tex., inviting the members to attend the meeting of the Texas State Nurserymen's Association at Austin, September 4 and 5.

Edward Baker, Fort Worth, Tex., told about the nurserymen's selecting Dallas for the national convention of the A. A. N. next year. This will be a big thing for the southwest. Headquarters will be in the Baker and Adolphus hotels. The Texas centennial will give an added attraction to Dallas.

F. T. Carroll, of the United States shelterbelt service, explained the aims of the shelterbelt planting.

P. J. Bellinghausen, Ponca City, Okla., and W. C. Griffing, Beaumont, Tex., became members at this meeting.

The regular midwinter meeting will be held in Oklahoma City, Wednesday, January 15, 1936.

Mrs. Jim Parker, Sec'y.

PICNIC IN SOUTH MILWAUKEE.

Practically the entire membership of the Wisconsin Nurserymen's Association and their families enjoyed a delightful picnic on the beautiful shores of Lake Michigan at Grant park, South Milwaukee, Wis., Wednesday, August 7.

Thomas Pinney, of the Evergreen Nursery Co., Sturgeon Bay, and president of the association, gave an interesting report of the American Association of Nurserymen convention held at Cincinnati, O., in July. Mr. Pinney ably elaborated on the plan submitted by the Costich committee for the revitalization of the American Association of Nurserymen. The general sentiment of the Badger nurserymen was favorable to such a plan. Everybody felt that closer coöperation between state trade associations and the national association is much needed.

H. W. Riggert, of the Coe, Converse & Edwards Co., Fort Atkinson, augmented Mr. Pinney's report of the A. A. N. meeting, and both men mentioned the noticeable spirit of optimism that prevailed at the Cincinnati convention.

E. L. Chambers, Madison, state entomologist, gave a talk on "The Nursery Pest Problem" and told what had been accomplished through effective control measures. H. J. Rahmlow, Madison, secretary of the Wisconsin Horticultural Society, briefly spoke on the interest manifested in this organization

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to plant hardy walnuts for commercial purposes.

The nursery firm of August Trautman & Son, Racine, was admitted to membership in the Wisconsin Nurserymen's Association. Plans for the winter meeting of the association, which will be held at the Republican hotel, Milwaukee, Tuesday, February 11, were discussed. Every nurseryman present expressed appreciation of the informal meetings that have been held during the past several years and hoped that this policy will become permanent.

M. C. Hepler, Sec'y.

ANTHRACNOSE ON SYCAMORES.

A serious epidemic of anthracnose is defoliating sycamore trees in the region about St. Louis, Mo., this season, attacking nearly every tree of this variety within fifty miles of the city limits. Not for many years has the disease, caused by one of the sphere fungi, Gnomonia veneta, been so destructive. First described in 1848, the disease is of common occurrence in the Mississippi valley, and some infected trees are found in the river bottoms each spring. The continued wet weather this spring furnished ideal conditions for the spread of the disease. A recent issue of the bulletin of the Missouri Botanical Garden, St. Louis, Mo., describes the disease and suggests control measures as follows:

"The first indication of the presence of anthracnose is the wilting of the newly opened foliage, the initial attack having been made on the petiole of the half-grown leaves. The advent of sunny, dry weather usually halts the spread, and the only damage done is that the sycamore is slightly delayed in coming into full foliage. If, however, the weather should remain cloudy and humid, as happened this year, the disease spreads downward from the first leaf, enters the new shoot and causes its death. Within a few weeks the entire tree is defoliated and, as a result, much weakened and exposed to attack by other enemies.

"Anthracnose can be controlled by spraying with Bordeaux, the first application to be made as the leaves unfold in April. Additional spraying should be done during May to insure complete coverage of the continually unfolding foliage and to replace whatever spray might have been removed by rain. The disease varies in its intensity with the rainfall of April and May, the wetter the spring the greater being the danger of defoliation.

"One of the most striking features of anthracnose this year is its almost complete absence from trees within the range of the St. Louis smoke pall. Completely defoliated trees cannot be found within several miles of the city limits. This may be due to the efficiency of smoke as a fungicide. Anthracnose makes its appearance with the opening of the buds in spring, at which time the city is still clothed in a smoky mantle. It thus appears that the smoke-begrimed city trees are spared from attack by virtue of their very dirtiness."

THE Central California Nurserymen's Association will meet with the California Horticultural Society August 19, at the Women's City Club, San Francisco.

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"OLD ROSES."

A book on an almost untouched subject that should stimulate interest in the collecting and preservation of old-fashioned roses is "Old Roses," by Mrs. Frederick Love Keays, recently published by the Macmillan Co. Growers interested in trends of plant collecting by advanced gardeners will find the volume an admirable one to provide a comprehensive survey of the topic.

Mrs. Keays tells the story of the development of the rose, from the June-blooming varieties of the pioneers through the period when the plant hunters introduced everblooming roses from China to the time when the Empress Josephine made the rose the flower of fashion. Mrs. Keays then describes the ascendency of tea roses, moss roses and the early hybrid perpetuals.

There are 222 pages in the book. Included are descriptions of approximately 150 varieties of roses, dating from 1596 to 1880, which have been collected and grown at Creek Side, the author's farm in southern Maryland. There are chapters on collecting and recording, on identification of varieties and finally on how to use old roses.

Pictures of old varieties, made from colored plates in rare old books and from the author's photographs of roses she has grown, as well as many line drawings of rose forms and habits, supplement the text. The book is cloth-bound and can be purchased for $3.

NORTH CAROLINA ACTION.

A fair price list for a large number of plants and shrubs was recently sent to all nurserymen in North Carolina, having been prepared by a committee of the North Carolina Association of Nurserymen. The list is designed to be at least a guide in the stabilization of prices, even if it is not accepted in its entirety, Secretary R. W. Leiby, Raleigh, states. It is expected that the fair price committee will augment the list from time to time.

THE White Rose Seed & Nursery Co., York, Pa., is renovating its quarters at 358 West Market street. Included in the alteration plans is a complete new floor.

D. L. SMITH, who has been in the nursery business at Devonshire boulevard and Chatsworth drive, Van Nuys, Cal., with a brother, has bought an acre on Sepulveda boulevard, Van Nuys, where he will establish display facilities and a salesroom, continuing to grow stock at the old location.

Fruit Tree Comments

By H. B. Tukey, Chief in Research, New York Agricultural Experiment Station, Geneva, N. Y.

DWARF FRUIT TREES.

Apple trees now growing on the farm on various dwarfing stocks are an interesting sight—not that they are behaving any differently than they should, but that they are behaving exactly as they should. Baldwin trees on Jaune de Metz roots are 3 years old and loaded with fruit, while adjacent trees on crab roots have none. To be sure, the dwarf trees are scarcely shoulder high and quite sparse, as compared with the standard trees on crab roots, yet the amazing precocity of dwarf trees, together with their small size, never ceases to arouse interest and suggest possibilities.

The thought always occurs "Why do we in America not develop dwarf trees for the amateur and home gardener?" Of course, the answer is not to be given in one breath, but past history has shown dwarf trees to have their weaknesses. First of all, they are not overly rugged to meet American climatic vicissitudes. Quince roots, for example, killed out from under dwarf pears a year ago, and dwarf apple trees are shallow-rooted and blow over. Besides this, insect and disease problems are so severe that fruit production has been steadily moving away from the home gardener to the commercial orchardist who has resources and equipment to meet these problems. Furthermore, a dwarf tree requires special care and must be watched for scion roots, which may put it on its own roots and thus defeat the dwarf idea.

Yet, with all these black marks against the dwarf tree, one cannot look at heavy-fruiting small trees without realizing what tremendous pleasure and satisfaction an amateur would derive from a tree or two in his back yard. What if the tree does kill out? What if insects and diseases do bother? Rosebushes do not last forever, and tulips must be looked after. There has at least been the fun of playing with a tree which can be kept in hand, watching it leaf out, bloom, set and mature fruit. And if it fails, a new tree can be planted and be had performing in two years. Is there an opportunity in the dwarf tree that American nurseries, landscape gardeners and amateurs have been overlooking, or is this just the usual burst of enthusiasm that greets a successful dwarf tree? H. B. T.

A SUPERIOR MAZZARD STRAIN.

We are watching with a great deal of interest about 200 trees of a hardy mazzard type which we imported from Europe a few years ago as a possibly improved mazzard. The interesting fact about these trees is their uniformity and seeming trueness to type. Not only do they appear uniform in leaf and tree characters, but also in fruit characters —yet they are seedlings. In other words, these trees suggest the possibility of being a pure seed line, something that would be of considerable value in the production of cherry seedlings.

H. B. T.

TESTING TREE SEEDS.

There is a need for a reliable germination test for fruit tree seeds before they are planted. To have a block of peach seeds fail to sprout is a greater loss to the grower than the price of the seeds. Not only is the land tied up for part or all of a season, with a loss of time and labor, but also the yearling peach trees that were to be available to fill orders in another year will not be on hand. It is this element of uncertainty that growers should eliminate, or at least reduce. At present there are several rather technical processes that can be used to determine the general tone or viability of a given sample of seeds, but there is no accurate germination test without afterripening the seed and germinating it in the regular way. Twelve weeks is too long for a planter to wait to receive information in this way.

As simple a method as we know at the present time is to crack 100 pits and remove the kernels. Place them in water overnight, so that the brown seed coats will slip off fairly easily. Examination of the naked embryos will give a fair appraisal of the condition of the seeds; at least, it will indicate which ones are actually dead. Dead embryos will have a yellowish cast and appear water-soaked, as contrasted with the clear white color of viable embryos.

Of course, a test of this kind is only approximate and will not give the relative vigor of the living embryos, yet it will reduce the chances of planting a batch of seeds that are entirely dead. This very method was used last fall and was the basis for plowing under an already-planted field and replanting another. Results this spring fully justified the procedure; the one field would have had scarcely a seedling, while the other has a beautiful stand of seedlings. More than one bushel of dead seeds has been planted unwittingly in the past.

The same test will be found effective with other seeds. In the case of apple and pear, it may not be so easy to remove the horny seed coats, but a little practice will prove it possible. Even a rough indication of the viability of the seed is worth the effort. Yet seedsmen and growers alike would welcome a more accurate germination test.

H. B. T.

REPLACEMENT LOSSES.

In line with a previous comment on the planting of trees, a test is being run to see what can be done to reduce the losses of spring-planted trees taken from storage. It has been suspected that this is a moisture problem, and the experiment has been planned with this in mind. The results after a few weeks indicate that there may be something to the idea. We have long felt that nurserymen have been called upon to make more replacements than they normally should. Perhaps a little education along with a shipment of plants may help the situation. It will be interesting to see just how the test turns out. H. B. T.

CUTWORMS.

Cutworms seem to be unusually bad this season. They do not bother for long, but while they are at work they often cause terrific damage. Young buds on budded stock are especially subject to trouble from this source in some seasons. Prompt recognition of the injury and proper treatment will check the damage. The recommended proce-

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dure is to spread a poison bait. Mix twenty pounds of bran and one pound of Paris green. Dissolve two quarts of molasses in about three and one-half gallons of water. Squeeze three lemons or oranges into the molasses-and-water mixture and chop up the peel into small pieces and mix it in. Sprinkle the liquid over the dry mixture of bran and Paris green and keep stirring it or shoveling it over while adding more liquid until it is damp but not wet. Spread the material in the evening so that it will not dry out before the cutworms have had a chance to satisfy their appetites. The quantity given will cover three acres, broadcast. Or, if it is a question of individual plants, sprinkle a small quantity in a circle around each plant. H. B. T.

GROWING CONDITIONS.

Looking about this season, one feels that nursery stock generally is in good shape. Early rainfall was a little lacking, but growing conditions have, in general, been favorable. Stock has gone into the ground in good condition, and while it has been slow to take hold and get under way it has every indication of developing well.

Some growers have felt concern for the slowness of plants to start. In one instance, peach seedlings did not seem to be growing rapidly. The stand from the pits was splendid, but the growth of the young shoots was slow. The question was whether or not to apply nitrogen fertilizers to speed growth. Fertilizers are useful when their absence is the limiting factor, but this season, with its coolness and moisture deficiency, makes it a question whether fertilizers are the limiting factor. With warmer weather and rain, the rate of metabolism in the plants is always speeded up. Without either or both, no amount of fertilizer will push the seedlings faster. H. B. T.

COLLECTIONS SEEM BETTER.

According to some of the reports, prospects in the nursery line must be picking up. One small concern sent out bills and received $264 by return mail. This was better than had been experienced in four years. Perhaps it was because of the collection manager. There are other signs to indicate, however, that the nursery business is in for better times so long as nurserymen do not plunge in and attempt to outdo each other with bigger and better plantings. H. B. T.

FROM T. Kiyono, nurseryman of Crichton, Ala., has come a post card of a beautiful scene in Japan, where Mr. Kiyono has been visiting this summer.

J. HORACE MCFARLAND, Harrisburg, Pa., was recently appointed a member of the national park trust fund board by President Roosevelt. Various bequests and gifts to the national parks will, under a law recently passed, be administered by the board. The personnel of the board includes Arno B. Cammerer, director of the national park service; Louis Hertle, Dr. McFarland, the Secretary of the Treasury and the Secretary of the Interior. The board serves for a term of three years, or until successors are appointed.

20,000 **CHERRY**, Montmorency and Early Richmond, 2-year, XX and 1 inch.
5,000 **SPIRÆA**, Vanhouttei, 3 to 4 feet and 4 to 5 feet.
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OBITUARY

Windsor H. Wyman.

One of the oldest, most highly esteemed and best known New England nurserymen, Windsor H. Wyman, died August 1. He was the founder of the noted Bay State Nurseries, Inc., North Abington, Mass. Mr. Wyman had been in poor health for several years and was critically ill a year ago, but managed to travel to his winter home in Florida. He passed the winter there, but subsequently failed. A patient sufferer during the whole of his long sickness, he was pleased to see his old friends and converse with them until nearly the end.

The deceased was a native of Maine and attended Colby College and later the Newton Theological Seminary near Boston, intending to follow the ministry as a vocation. He occupied several church pulpits and served in the First Baptist church, North Abington, for several years, in which church funeral services were held for him.

Even when in the ministry he took a keen interest in plants and flowers. He acted as a sales agent later for the Shady Hills Nursery Co., Bedford, Mass., in those days a leader among Massachusetts nurseries. In 1891 he started in business on his own account in North Abington, where he purchased land and operated under the name of the Bay State Nurseries. He soon built up a splendid business through his personality, broad vision and tireless energy, making North Abington the Mecca for all nurserymen in the east. In later years his sons, Donald and Richard, were taken into the business, the latter operating the Framingham Nurseries, acquired from W. B. Whittier & Co., while Donald assumed charge of the extensive nurseries located in and around Abington. In recent years, the two nurseries were incorporated under the title of Bay State Nurseries, Inc., being easily the largest of their kind in New England, growing all kinds of trees, shrubs and vines, as well as hardy herbaceous plants in large quantities.

Mr. Wyman was married and had four children—Richard M., Donald D., Mrs. Calkins, Harvard, Mass., and Mrs. Paul Baumann, North Abington, Mass.—all of whom, with Mrs. Wyman, survive him. He also had several grandchildren.

In North Abington, where he resided most of his life, Mr. Wyman had filled numbers of town offices and been at all times a strenuous worker for civic betterment, being held in the highest esteem by his fellow townsmen. He was active until recent years in the New England Nurserymen's Association and the American Association of Nurserymen, serving as vice-president of the latter for one term. At conventions, everything he said was listened to with interest and respect.

Funeral services were held August 4 in the church in which Mr. Wyman was once the pastor and for which he was always a tireless worker, followed by interment in Mount Vernon cemetery, Abington. Many members of the nursery trade were present from Massachusetts, Rhode Island, Connecticut and New York, and the large attendance testified to the high regard in which Mr. Wyman was held in the community.

G. A. Stevens.

G. A. Stevens, Harrisburg, Pa., died suddenly Sunday morning, August 11. Mr. Stevens was well known to the rose growers of the country because of his position as secretary of the American Rose Society and a writer of rose books and articles for horticultural magazines.

About eleven years ago Mr. Stevens joined the editorial staff of the J. Horace McFarland Co. He was also supervisor of the noted Breeze Hill Gardens, connected with the residence of Dr. J. Horace McFarland at Harrisburg.

Mr. Stevens was editor of the American Rose Magazine and associate editor of the American Rose Annual. He collaborated with Dr. McFarland and Robert Pyle in preparing the book, "How to Grow Roses," and he was the author of "Garden Flowers in Color," published about two years ago, and of the book, "Climbing Roses."

Mr. Stevens was unmarried, but is survived by his father, mother and two sisters. The funeral and interment were held at Mineral City, O. E. F. R.

CHARLES F. CARTWRIGHT, owner of the Whitegate Nursery, Pomona, Cal., died recently. He was formerly in business at Oakland, Cal.

WITH capital of $50,000, Shenandoah Valley Nurseries, Inc., Waynesboro, Va., recently received a state charter. William E. Hyde is president; J. C. Brand, vice-president, and E. E. Snyder, secretary-treasurer.

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Photographed disks above show comparative effects on crown gall bacteria. Large test discs contain bacteria; two white dots are tapes; dark area around one tape is region freed from germs.
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A spiral wrapping of this new tape makes an air-tight germicidal covering that will protect a root graft from any parasitic infection. There can be no girdling because Revolite Antiseptic Nurseryman's Tape decomposes before the new graft starts to swell.

Users of this tape have had improvements in stand of from 65 to 75 per cent which more than repaid them for the cost of the tape. Send for your free sample.

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